

Characteristic study of catastrophic tire failure in Eastern Province of Saudi Arabia

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Abstract

Tire failure rates are high in Saudi Arabia. The increase in tire failure and the resulting kingdom wide motor vehicle accidents have been recognized by National Traffic Safety Committee. This study was conducted in three stages. First stage deals with the assessment of driver's knowledge and awareness on tire safety and maintenance practices and inspecting the physical aspects of tire in the field for the driver's vehicle interviewed. Second stage deals with assessment of service station personnel knowledge and awareness on tire safety and maintenance practices and inspecting the store rooms for its compliance with SASO requirements on tire storage. And the final stage deals with checking the adequacy of the SASO test on tires.

It was found from this study that one of the major impeding factors in tires premature failures was under inflation. Forty one vehicles tire surveyed found to be under inflated while twelve percent were over inflated when compared with 15% recommended pressure. Service station pressure gauges were not accurately calibrated as fifty two percent of pressure gauges inspected causes under inflation while thirty two percent over inflation. Overall analysis of the questionnaire data shows that both driver's and service station personnel lack adequate knowledge in tire safety and maintenance. The tire repair procedure practiced by local service station were not carried out as per recommended procedures. Bead unseating test requires up gradation in standards and Plunger test could be eliminated from the SASO.